attaches to a tubular extension **88**, to which a dust removal system or vacuum cleaner may be attached. Alternatively, a short hose or length pipe may be attached to tubular extension **88** and terminated in a dust bin. With such an arrangement and positioning of sub-fences **28** and **30** as described above, most material removed from workpiece **90** will be driven into the receiving bin.

As will be appreciated by those skilled in the art, in many routing or shaping operations, including, in particular, formation of ornamental edges on workpieces, sub-fences **28** and **30** should desirably be located in the same vertical plane. However, by positioning the surface of infeed sub-fence **30** within the cutting radius of a straight cutter **40**, as shown in FIG. **3B**, and positioning the surface of outfeed sub-fence **28** in alignment with the same cutting radius of cutter **40**, it is possible to use the router table fence system **10** of the present invention for edge jointing. As will be appreciated by one skilled in the art by reference to FIG. **3B** in particular, this will result in removal from a workpiece of a small amount of material and will provide an appropriately positioned outfeed reference surface.

In the present invention, such relative positioning of the sub-fences **28** and **30** may be rapidly and accurately accomplished by dropping a jointing spacer **33** (shown in FIG. **1** exploded away from the system **12**) into position between outfeed sub-fence **28** and lower spar **24**. Jointing spacers **33** may be made of a variety of materials and in a variety of thicknesses. The materials may include wood, metal and plastic. As can be seen in FIGS. **3** and **3B** the amount of material removed from a workpiece in such a joining operation is established by the thickness "y" of the jointing spacer **33**.

FIG. **7** illustrates safety shield **100** affixed directly to the front face **102** of fence **12** by passing screws **104** through washers **105** and vertical slots **106** in the vertical arm **108** of shield **100** and into T-nuts **110** received in a T-slot **32**. This fixes vertical arm **108** of shield **100** directly against the front face **102** of fence **12** so that horizontal arm **112** of shield **100** extends horizontally out from the front face **102** of fence **12** above a router cutter (not shown) positioned immediately adjacent to fence **12** (or partially surrounded by fence **12**). Safety shield **100** may be made of polycarbonate or acrylic plastic or a variety of other suitable materials, although transparent materials are preferable.

When safety shield **100** is used with fence **12** with sub-fences **28** and **30** (or the cutter is for some other reason spaced out from the front face **102** of fence **12**), stand-off spacers **114** may be used with longer screws **116** as illustrated in FIG. **8** to appropriately position shield **100**.

A hold-down assembly **120** may be easily positioned on fence **12** by affixing the body **122** to the top **124** of fence **12** by passing body cap screw **126** through body **122** and in to a tee-nut **110** in the T-slot **32** on the top **124** of fence **12**, as illustrated in FIG. **9**. Body **122** grasps two arms **128** and **130**, each of which are round rods. Top spring arm **128** grasps, in a slot **132** in one end of arm **128**, a top spring **134**, which is a leaf spring having a curved end **136** positioned to press against the top of a workpiece (not shown) to urge it against the router table top **42**. Arm **128** may be rotated within body **122** to increase or decrease the pressure exerted on a workpiece by spring **134**.

Side spring arm **130** is also held within body **122** by positioning arm **130** in a bore **123** through body **122** and fixing it in position with a forward cap screw **127** threaded into body **122** to press against arm **130**, permitting arm **130** to be moved in a direction normal to the front face **102** of fence **12**. Side spring arm **130** has a transverse bore **138** that receives side spring post **140**, which is fixed in position with a post screw **142** threaded into the end of arm **130** so that it intersects bore **138** and presses against post **140**. Side spring **144** is fixed in a slot **146** in the lower end of post **140**. Side spring **144** is a leaf spring similar to top spring **134**, and it has a similar curved end **148** that is positioned to press against the side of a workpiece (not shown) opposite the front face **102** of fence **12** to thereby maintain constant contact between the fence and the workpiece during machining of the workpiece.

The router table fence and accessories of the present invention are not confined to the embodiments described herein but include variations and modifications within the scope and spirit of the foregoing description, the accompanying drawings and the following claims.

We claim:

1. A router table fence for use with a router table top, comprising:

(a) a top spar having a first length and a front face,

(b) two bottom spars having front faces, and

(c) connectors for attaching the bottom spars to the top spar so that:

(i) the front faces of each of the top spar and the two bottom spars are in substantially the same plane and

(ii) opposed ends of the two bottom spars may be positioned either:

(x) abutting, or

(y) separated by a selected distance.

2. The router table fence of claim **1**, further comprising two sub-fences, one of which is attached to the front face of each of the bottom spars, and each of which sub-fences has a working face for contact with workpieces.

3. The router table fence of claim **2**, wherein the sub-fences are made of a material that can be machined with a router cutter.

4. The router table fence of claim **1**, wherein the cross-sectional shape of each of the top and bottom spars is substantially identical.

5. The router table fence of claim **1**, wherein the cross-sectional shape of each of the top and bottom spars is substantially a rectangle.

6. The router table fence of claim **1**, wherein the cross-sectional shape of each of the top and bottom spars is substantially a square.

7. The router table fence of claim **1**, wherein one of the top spar or the bottom spars has at least one rib that may be received in a depression in the other of the bottom spars or the top spar so that the bottom spars may slide longitudinally relative to the top spar while the bottom spars maintain vertical alignment relative to the top spar and each other.

8. The router table fence of claim **1**, further comprising means for engaging the bottom spars with the top spar so that the bottom spars may slide longitudinally relative to the top spar while maintaining vertical alignment relative to each other.

9. The router table fence of claim **2**, further comprising means for positioning the working face of one of the sub-fences in a plane parallel to but displaced from the plane within which the working face of the other sub-fence is located so that a straight cutter positioned to rotate tangent to the working face plane of the one sub-fence can produce a substantially flat surface on a workpiece fed from the other sub-fence face, into the cutter and onto the one sub-fence face.

10. The router table fence of claim **1**, wherein the top spar has a top face orthogonal to the front face, the front faces of

the bottom spars are in substantially the same plane as the top spar front face and the bottom spars each have a bottom face substantially orthogonal to the bottom spar front faces.

11. The router table fence of claim 10, wherein each of the top spar front and top faces and the bottom spar front and bottom faces have a longitudinal T-slot therein.

12. The router table fence of claim 1, further comprising means for fixing the fence to a router table top.

13. The router table fence of claim 12, wherein the fixing means comprises at least one clamp for attachment to the fence and engagement with the router table top.

14. The router table fence of claim 12, wherein the fixing means comprises two clamps, each of which clamp has a body for contact with the top of the router table top, and, attached to the body:

(a) a projection having a T-shaped cross section to be received in a T-shaped slot in the fence and

(b) a foot through which a threaded rod extends to exert pressure against the underside of the router table top generally opposite the clamp body.

15. The router table fence of claim 1, further comprising a dust chute comprising:

(a) an inlet for positioning adjacent to the fence,

(b) a tubular extension communicating with the inlet for attachment to a dust removal system or vacuum cleaner and

(c) at least one magnet affixed to the chute for attachment of the chute to ferrous metal surfaces.

16. The router table fence of claim 1, further comprising a safety shield for attachment to the fence, the shield comprising a substantially transparent shield member attached to a vertical arm for fixation to the front of the fence in a position so that the shield member is positioned generally above a router cutter protruding through the router table top.

17. The router table fence of claim 1, wherein the safety shield is made of polycarbonate plastic.

18. The router table fence of claim 1, wherein the fence has a front and the fence further comprises a hold-down assembly for mounting on the fence, the hold-down assembly comprising a body to which there is attached:

means for exerting pressure against a top of a workpiece to urge it against the top of the router table top, and

means for exerting pressure against a side of a workpiece to urge it against the front of the fence.

19. The fence of claim 18, wherein the fence has at least one T-slot and the hold-down assembly attaches to the fence by engaging a T-slot in the fence.

20. The router table fence of claim 1, further comprising a micro-adjust stop for accurately repositioning one end of the fence, comprising a stop body for attachment to the router table top and a positioning screw threaded through the body for contact with a face of the fence in a range of locations determined by the position of the screw within the body and the location of the body on the router table top.

21. The router table fence of claim 20, further comprising longitudinal and rotational position indicating means on the positioning screw and, attached to the body, a cursor for establishing the longitudinal and rotational position of the screw relative to the body by reference to the position indicating means so that changes in position of the screw can be accurately determined.

22. The router table fence of claim 20, further comprising spaced apart longitudinal marks around the circumference of the positioning screw and spaced apart annular rings on the positioning screw and, attached to the body, a transparent plate having cursor marks for establishing the longitudinal and rotational position of the screw relative to the body by reference to the longitudinal marks and the annular rings so that changes in position of the screw can be accurately determined.

23. The router table fence of claim 1, further comprising a fixed stop usable to establish the position of the fence on the router table top to make it possible to remove the fence from the router table top and later return it to the same position, comprising:

a section of rod penetrated by a slot within which an edge of the router table top may be received and

a screw threaded into an axial, threaded hole in one end of the rod section so that an end of the screw may be tightened against a surface of the router table top when the edge of the router table top is received within the slot.

24. A router table fence for use with a router table top, comprising:

(a) a top spar and

(b) two bottom spars, each of which spars:

(i) has a top face, bottom face and two side faces and

(ii) is fabricated of extruded aluminum having a generally square cross-sectional shape with a laterally centered, longitudinal T-shaped slot in each face, and

(iii) first structure on a first face of one of the spars for engagement with second structure on an opposite face of another of the spars so that the one spar can slidingly engage the other spar with at least a second face of the one spar maintained in substantially the same plane as a second face of the other spar.

25. The router table fence of claim 24, wherein the first structure comprises a pair of longitudinal ribs and the second structure comprises a second pair of longitudinal ribs in a position laterally offset from the first pair of ribs.

26. A method of accurately positioning a router table fence on a router table top relative to a router cutter protruding above the router table top, comprising the steps of:

(a) fixing the router table fence in a first approximately correct position on the router table top with fence locks that attach to the fence and table top on opposite sides of the table,

(b) taking a first test cut in a workpiece by passing a portion of the workpiece through the revolving router cutter while maintaining the workpiece in sliding contact with the fence,

(c) positioning a micro-adjust fence stop against the front or back of the fence at one edge of the router table top

(d) loosening the fence lock adjacent to the one edge of the router table top,

(e) measuring on the workpiece a distance the fence position needs to move relative to the router cutter,

(f) using the micro-adjust stop to reposition the fence contacting the micro-adjust stop by twice the distance, and

(g) tightening the fence lock adjacent to the one edge of the router table top.

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